

ICS 13.180
CCS A 25



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 31002.1-2014

**Ergonomics -- Manual handling -- Part 1: Lifting and carrying
(ISO 11228-1: 2003, MOD)**

人类工效学 手工操作 第1部分：提举与移送
(English Translation)

Issued on: September 3, 2014

Implemented on: February 1, 2015

Issued by: Standardization Administration of China

Table of Contents

- Foreword
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

GB/T 31002 "Ergonomics manual" intends divided into the following three parts.

- Part 1. lifting and transfer;
- Part 2. push and pull;
- Part 3. high frequency low load operation.

This section GB/T Part of 131,002.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses redrafted Law Amendment uses ISO 11228-1:2003 "Ergonomics manual - Part 1. Lifting and shifting give away".

This part of ISO 11228-1:2003 and its technical differences for the following reasons.

- Recommend quality limit modified by 25kg to 23kg, to meet the physical characteristics of the Chinese people.
- Appendix A.7.2 by "object width 0.70m" instead of "object width 0.75m"; use " $vM = 1 - 0.3 \times |0.70 - v|$ " Instead of " $vM = 1 - 0.3 \times |0.75 - v|$ "; use "if $v > 1.70$, then $vM = 0$ " instead of "if $v > 1.75$, then $vM = 0$ "; with" v Introduction Musculoskeletal disorders are common worldwide, but also often in the incidence of occupational health.

Size and quality of the manual operation object operating position, the operating frequency, duration and other factors can operate alone or in combination to produce a crisis Insurance operating activities, triggering the risk of musculoskeletal disorders.

The ideal approach is. Considering the operating position, the operating frequency and duration of operation, given the quality of the operation target recommended limit Value, so that people can reasonably and effectively perform manual labor.

Ergonomic hand lifting method for reducing operational risk transfer is very effective. Good job design is especially important, in particular, the operation Tasks and work space design, which may include the use of appropriate auxiliary equipment.

This section provides a step by step approach of evaluation methods to assess the manual lifting and transferring health risks. We are given at each step the recommended limits. In addition, in Appendix A, Appendix B and Appendix C also gives guidelines for usability ergonomics manual mechanism.

This section provides risk assessment model can be used for risk assessment associated with manual operation. This model considers the lifting and manual operation as the risk factors associated with (unfavorable conditions), and the duration of manual operation. Adverse conditions may be the operation target mass is too large, or lifting present during twisting, bending, operating spacing is too large, which are not comfortable operating position. This section includes repetitive and non-repetitive hand Workers lifting operation.

Recommended limits are comprehensive utilization of epidemiology, biomechanics, physiology, psychophysics four key research obtained by the method.

Ergonomic manual

Part 1. Lifting and transfer

1 Scope

This section GB/T 31002 specifies the quality manual lifting and transferring recommended limits were considered the task intensity, frequency and duration Influence of time. This section of population health risk assessment evaluation work multiple tasks variables to provide guidance.

This section applies to the mass of the object is not less than 3kg manual lifting and transferring.

This section applies to hand on a level surface moderate pace (0.5m/s ~ 1.0m/s) of the transfer operation.

This section does not apply to static gripping objects (stagnant), push or pull objects, single object portable lift, sitting manual operation, and two or Multiplayer lifting objects. Grip, manual sliding objects will be specified in other parts of this standard.

This section 8h-based daily working hours. This section does not apply to a combination of task analysis of day within one shift.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references version, the latest edition (including any amendments) applies to this document.

GB/T 5703-2010 for the technical design of the Basic human body measurements (ISO 7250-1:2008, MOD) GB/T 16856 (all parts), Safety of machinery - Risk assessment [ISO

14121 (all parts)] GB/T 20000.4 Guide for standardization - Part 4. Safety aspects Standard (GB/T 20000.4-2003, ISO/IEC Guide51, MOD) EN1005-2 Safety of machinery - Human physical performance - Part 2. manual and mechanical parts (Safetyofmachinery-Humanphysicalperformance-Part 2. Manualhandlingofmachineryandcomponentpartsofmachin-ery)

3 Terms and Definitions

The following terms and definitions apply to this document.

Manual manualhandling to mention the use of human, release, transfer or otherwise, or constraint object moving activities.

Note: The object also includes a human or animal.

Hand lift manuallifting in the absence of auxiliary machinery and equipment conditions, up from an initial position of moving objects.

Note: The object also includes a human or animal.

Hand lowered manuallowering in the absence of auxiliary machinery and equipment conditions, down from an initial position of moving objects.